"A Study of Nutritional Status and its Relation to Haemoglobin (Hb) Level of Early Adolescent Girls: A Comparative Study of Sangli and Kolhapur City"

Ms. Susmita Sadashiv Durgule
Assistant Professor in Home Economics,
Smt. C. B. Shah Mahila Mahavidyalay,
Sangli, (Maharashtra).

Dr. Surekha R. Gaikwad,
HOD of Home Science,
S.S.S. Pawar College, Purna,
Dist. Parbhani, (Maharashtra)

1. INTRODUCTION :

Puberty could be seen as a transitional phase bridging childhood and adulthood. It is a significant time in human growth and evolution. The early adolescent period, following the pre adolescent stage, spans from 13-15 years. Puberty can be a challenging time due to the rapid growth it entails. Protein, iron, and calcium are essential for the growth, acceleration, and strengthening of bones in young individuals.

The prevalence of fragility is high among young girls in India, with over 70% having iron deficiency. Studies have shown that the use of iron supplements and folic acid can improve adolescent growth in other parts of the world. (Khanani S.) Youth present the last chance to reconcile and restore the halted development from childhood, as well as to address the stalled development and skeletal growth, in order to break the harmful cycle of intergenerational malnutrition. An adequate and balanced diet intake is crucial for maintaining good health, especially during times of growth. Please rewrite this text in a more polished manner. Add line breaks where necessary.

2. OBJECTIVE OF THE STUDY : -

The objectives of study are:

1. To evaluate the physical growth of the selected sample adolescent girls.
2. To access the nutrition status of selected adolescence girls.
3. To evaluate the hemoglobin content in the blood sample of adolescent girls.
4. To examine the relation between anthropometry, dietary intake and bio-chemical status.

3. MATERIAL AND METHODS:-

A add up to of 600 youth young ladies from tall schools were chosen by stratified irregular examining. The chosen test comprised of early teenagers young ladies having a place to the age bunch of 13- 15 a long time. A add up to test of 600 adolescents young ladies was chosen haphazardly from auxiliary school of Sangli (300) and Kolhapur City(300).

Data regarding teenage girls was gathered through one-on-one interviews conducted by the researcher using a pre-designed questionnaire. A variety of methods, including anthropometry, biochemical analysis, dietary assessment, and clinical examination, were used to assess the overall health of young adolescent girls in urban areas of Sangli and Kolhapur. The hemoglobin substance from the collected blood test was determined using the cyanomethemoglobin method.

4. RESULT : -

The result from this comparative study showed that Hemoglobin level of early adolescent girls from Sangli city girls is less than Kolhapur city girls.

Table: 1:- Socio-Economic Conditions

Socio Economics Class	Kolhapur		Sangli			
	MEAN	STDEV	MEAN	STDEV	Chi sq test	P -Value
Size of Family	5.4	2.4	6.419463	5.176738		
Children in the Family	1.573604	3.456667	1.875576	1.276201	0.102705	0.9499

**P values calculated using chi-square test for the comparisons.*

Table no. 1 : Displays the economic status of the family of early adolescent girls.

Number of families found atomic families. Agreeing to estimate of family 40% families are little and around 50% of families are estimated to be at the center of this assessment. 10% families from both cities are found expansive in estimate. Larger part family has children within the domestic, underneath two a long time children populace is more in both city families. Proficiency level of families from both cities is 33% families have their education level auxiliary school level and close to 35% families have proficiency auxiliary school level instruction. As it were 20% families from both cities have college level instruction and 7% families have college level instruction. There no distinction found in instruction level of both cites family part.

There is a slight difference in the types of occupations of family members from both cities. Rarely do families have dual income streams, such as when both parents work. Most families from both cities include members of different age groups. Smooth out the text and add two line breaks where necessary.

Table: 2 : Anthropometric and Bio-chemical assessment

Anthropometric and Bio-chemical assessment	Kolhapur		Sangli			
	MEAN	STDEV	MEAN	STDEV	Chi-sq. test	P -Value
Height (cm)	149.8567	6.359055	150.7367	6.293331	0	1.0000
Weight (Kg)	39.21233	9.076148	39.63167	8.138342	0.256637	0.9924
Hb	11.45933	0.629391	9.866	1.442421	1.8	0.6149
BMI	17.33517	3.553681	17.40303	2.999726	0.522895	0.7699
Age of Early Menarche	11.9147	0.949568	11.4552	0.954511	0	1.0000

**P values calculated using chi-square test for the comparisons.*

Agreeing to NCHS Early pre-adult young ladies has a required height of 155cm to 161cm. The stature of two young ladies from the city is seen over the table. 50% of pre-adults from both cities are below the required height. Agreeing to the NCHS recommended weight range for early adolescence is 44kg to 51. 4 kg. 65% of adolescents from both cities have a weight below the specified range for their age. From both cities, approximately half of the young girls (Sangli 52%, Kolhapur 56%) had experienced menarche. The average age of menarche was after turning 11 years old. According to recent data, among pre-adolescents in Kolhapur city, 4% have a severe iron deficiency, 80% possess a mild iron deficiency, and only 16% have a normal hemoglobin level. Opposite to Sangli City, 5% of pre-adults are at a severe level, while 40% are at a moderate level, and 55% are experiencing mild iron deficiency. Seventy percent of pre-adolescent girls from both cities have a below average BMI, while twenty-seven percent have a normal BMI, with the remaining three percent surpassing the typical BMI level. The BMI of 17 is common among the young residents of both cities. Please rewrite this text in a softened manner. Insert line breaks where necessary.

Table No: 3:- Diet of Adolescent Girl of Adolescent Girls from Kolhapur and Sangli City.

Nutrients	RDA	KOLHAPUR		SANGLI		CHI SQ	DF	P VALUE
		MEAN	STDEV	MEAN	STDEV			
CARBO HYDRATE	254.1833	94.81054	248.5934	84.16883	0.061442	4	0.9995	
PROTEIN	65gm	34.08467	11.53968	31.955	8.380467	0.034599	4	0.9999
FAT	22gm	52.186	11.07935	48.9023	13.11466	3.42E-06	6	1.0000
CALORIES	2060Kcal	1640.844	330.9087	1570.242	326.4428	0.235987	3	0.9716
IRON	28mg	9.306333	4.265003	8.897933	2.820329	0.179676	3	0.9808
CALCIUM	600mg	376.28	291.5258	412.7353	362.3246	0.000554	11	1.0000
VIT 'A' Beta-carotene	2400mcg	959.0343	343.9615	1007.875	429.2284	0.562634	3	0.9049
VIT'B1'	1.0mg	2.278733	2.179607	1.7225	0.54824	0.49132	4	0.9743
VIT 'B2'	1.2mg	1.7734	0.854858	1.838233	0.727663	0.011138	8	1.0000
VIT 'B3'	14.0mg	8.319533	2.847097	8.018767	2.917125	0.106112	5	0.9998
VIT 'C'	40.0mg	9.005667	5.619388	11.98667	8.545809	0.000193	6	1.0000

**P values calculated using chi-square test for the comparisons.*

Table no. 3 : Present the age-appropriate dietary recommendations and actual diet consumption of adolescent girls in Kolhapur and Sangli cities. The figure demonstrates that the intake of protein, iron, and vitamin C is below the Recommended Dietary Allowance (RDA), while fat consumption exceeds the RDA among adolescent girls in both cities. Consumption of Vitamin B1 and B2 exceeds the Recommended Dietary Allowance (RDA), while Vitamin B3 falls slightly below the RDA. There is no notable variation in calorie intake among adolescent girls from both cities. Calcium consumption meets the Recommended Dietary Allowance, ensuring that the intake is sufficient. Consumptions of B-Carotene fall short of meeting the recommended daily allowance (RDA). Please rewrite this text in a smoother manner. Remember to add two line breaks where necessary.

5. DISCUSSION:

The current think about inspected affiliation between slim down and Hb level of early juvenile young ladies from Sangli and Kolhapur city. This think about looks at connections

between nourishment information, dietary admissions and adolescents' weight and body composition. It is found that early juvenile young ladies from both cities are lean and hindered growth. Adolescent from both cities are hindered development and 65%adolescent from both cities has underneath there required weight for age. This consider depicts that the predominance of iron deficiency in early pre-adult young ladies. Within the show ponder, 100 % young ladies from Sangli were iron deficient and from Kolhapur 80% juvenile were iron deficient 45 % with separate iron deficient youthful from Sangli city. 70% juvenile from both cities are underneath the ordinary level of BMI. In any case affiliation was seen between destitute eat less and BMI.

The majority of members from both cities skipped breakfast, which includes items from all five groups' inadequate admissions of natural products and other vegetables, were also associated with frailty in this study. The natural products and other vegetables are excellent sources of vitamin A and vitamin C. These also serve as fantastic enhancers of the press retention. The dietary patterns of the young ladies revealed minimal consumption of eggs, dairy, meat, rich sources of protein, and essential micronutrients. Fifty percent of pre-adult individuals from both cities consume excessive fat but eat less regularly. The discovery revealed that impoverished individuals consume less, have irregular eating habits, and engage in minimal physical activity, all of which impact the health of adolescent girls. Please rewrite the text in a more polished manner and insert two line breaks where necessary.

6. CONCLUSION:

In this study, a lot more young girls in both cities have anemia. In this study, we found a strong connection between the nutrition of teenage girls and their hemoglobin (Hb) levels. Not knowing enough about nutrition affects what teenage girls eat. Not getting enough exercise and staying fit affects the health of teenagers. Poor growth (stunting) shows how well a society is doing economically and socially. Eating habits that aren't regular were linked to eating fewer fruits and vegetables among young girls in their early teens. The average food eaten by teenage girls in both cities, except for fats, was less than RDA. Most teenagers miss breakfast. The study emphasizes the importance of encouraging 'good breakfasts' for young girls.

–●●●●●–

8. REFERENCES

1. K. Venkaian (2002), *Diet and Nutritional status of rural adolescents in India, European Journal of Clinical Nutrition,* 56, 1119-1125.
2. Stang, Jamie (2002), *Assessment of Nutritional Status and Motivation to make behavior changes among adolescents. Journal of the American dietetic association, suppl, Adolescent nutrition: a springboard for health*.13-22.
3. T. Leenstra (2004), *Prevalence and Severity of Anemia and Iron Deficiency: cross sectional studies in adolescent schoolgirls in western Kenya, European Journal of Clinical Nutrition,* 58, 681-691.

4. Moreno L. A. (2008), *Assessing, Understanding and Modifying Nutritional Status, Eating Habits and Physical Activity in European Adolescent: The HELENA (healthy life style in Europe by nutrition in adolescence) Study, Public Health nutrition*, 288-299.

5. Gupta, Anmol (2012), *Anemia among Adolescent Girls in Shimla Hills of North India. Does BMI and Onset of Menarche Have a Role? Indian Journal of Medical Sciences,* 126-130.

6. Diethelm (2012), *Food Intake of European Adolescents in The Light of Different Food Based Dietary Guidelines: Results to The HELENA (healthy lifestyle in Europe by nutrition in adolescence) Study, Public Health Nutrition,* 386-398.

7. Beatrice Odongkara Mpora (2014), *Age at Menarche in Relation to Nutritional Status and Critical Life Events among Rural and Urban Secondary School Girls in Post Conflict Northern Uganda, Springer link License to Biomed Central Ltd.*

8. Hurlock E. B., (1964), *Child Development, 4th edition, Magraw-Hill Book Company, Tokyo, Japan.*

9. P. K. Shukla(1982). *Nutritional Problems of India. Prentice Hall of India Private Limited, New Delhi.*

10. D. L. Kusuma,(2001). *Profile of Nutrition of Rural Adolescent Girls, Discovery Publishing House, New Delhi.*

11. C. Gopalan, B.V. Rama Sastri and S.C. Balasubramanian,(2002). *Nutritive Value of Indian Foods, Reprinted edition, National Institut of Nutrition, Indian Council of Medical Reacher, Hyderabad.*

12. B. Srilakshmi,(2011). *Dietetics, 6th edition, New Age International Publishars, New Delhi.*